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The Jamestown Foundation

(<https://jamestown.org/wp-content/uploads/.../Terrorism-Monitor-June-30-2017.pdf?>)

Yemen's Houthi Missiles Keep Saudi Arabia Mired in Conflict

Publication: Terrorism Monitor Volume: 15 Issue: 13

The Jamestown Foundation

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June 30, 2017 05:53 PM

Saudi Patriot SAM batteries (Source: abc.net.au)

Missiles launched at Saudi Arabia by Yemen's Houthi fighters have proved to be wildly inaccurate as regards their targets but largely effective in terms of their media impact, frustrating Saudi claims to have eroded the fighters' capabilities. Indeed, concerns over Yemen's missile stockpiles have proved to be a key concern for Saudi Arabia and its Gulf Cooperation Council (GCC) allies ever since longtime Yemeni President Ali Abdullah Saleh agreed to relinquish political power in November 2011 in exchange for immunity from prosecution.

A key goal of the Yemeni political transitional period was to remove ballistic missile stockpiles from the hands of the Yemeni Republican Guard (YRG), a self-contained elite military force that reported directly to Saleh and fell under the command of his son and purported heir, Ahmed. When those efforts failed, the Saudis attempted to destroy the stockpiles militarily, a move that has been only somewhat effective and has contributed significantly to the current conflict.

Yemen's Missile Stockpiles

At the time of Saleh's resignation, most of Yemen's missile systems were stored in fortified compounds belonging to the YRG's 5th and 6th Missile Brigades, located atop Faj Attan, a mountain overlooking the Yemeni capital Sana'a. An additional YRG brigade, the 8th Artillery-Missile Brigade, possessed heavy rocket artillery systems and was based in a neighboring province south of the city.

Open source estimates vary regarding the Yemeni military's ballistic missile capabilities in 2011. Known missile stocks included systems inherited from the stockpiles of North and South Yemen, predating Yemeni unification in 1990. Most important among these were Soviet-era Scud missiles, which the People's Democratic Republic of Yemen (PDRY), or South Yemen, had begun acquiring

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in the 1970s. They also included the smaller and more mobile SS-21 Scarabs (OTR-21 Tochka), which both the PDRY and the Yemen Arab Republic (YAR), or North Yemen, had purchased in the 1980s.

The former militaries of both North and South Yemen employed some of these missiles during the country's civil war in the summer of 1994. Following the end of the civil war, the Scuds were transferred out of the PDRY's al-Anad missile base near Aden and eventually put under the control of the YRG's 5th and 6th Missile Brigades, headquartered on a hilltop overlooking Sana'a.

A Congressional Research Services report estimated that, in 2004, the unified Yemeni military had 24 SS-21 missiles and 18 SS-1 Scud B missiles, each with fewer than 50 launchers ([CRS](#), March 5, 2004).

During the 2000s, Saleh's government acquired North Korean Scud-type Hwasongs, including 15 missiles that were seized in transit but subsequently released to the Saleh government. According to one estimate, the Saleh government purchased 45 Hwasong-6 (Scud-C variant) missiles in the 2000s. [1] Unconfirmed rumors that it had also acquired Hwasong-10 (BM-25 Musudan) missile systems from North Korea have been repeatedly mentioned in Yemeni media, especially since 2015 ([Arabian Gulf Centre for Iranian Studies](#), November 1, 2016).

The Yemeni military's missile brigades also possessed decrepit and obsolete FROG-7 (9K52 Luna-M) rocket artillery systems, while its air defense units had SA-2 Guideline (S-75 Dvina) air defense systems that could be modified to function as surface-to-surface ballistic missiles with small warheads.

Most systems were reportedly in poor condition. Some of the North Korean missiles obtained in 2002 were non-functional due to defective parts, according to one account, while both the Scuds and the OTR-21s required the constant attention of foreign experts to remain operational ([Oryx Blog](#), March 29, 2015).

All this notwithstanding, the GCC, and Saudi Arabia in particular, considered the missiles a latent threat, but believed that by removing Saleh's relatives from positions of power, particularly within the YRG, it could be largely neutralized.

Taking Control

In February 2012, former Saleh ally and longtime vice-president Abd Rabbo Mansour Hadi became president for the GCC-backed two-year transitional period. Shortly thereafter, the interim government began issuing decrees removing Saleh's close relatives from top military and security posts.

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In mid-December 2012, it ordered all three of the YRG's missile brigades — the 5th and 6th Missile Brigades and the 8th Artillery-Missile Brigade — to be incorporated into a newly created "Missile Brigades Group." The decree implied that Ahmed Saleh and the YRG would relinquish control of all ballistic missiles.

Although on paper the new missiles brigades responded directly to President Hadi, in reality the president held limited sway over its commanders. [2] Saleh, who while in power had controlled the Yemeni armed forces through a mixture of corruption, intrigue and influence peddling, continued to exert important influence. His more than 30 years of rule had provided military officers with great social and material benefits, and many of them were reluctant to fully break with him and his allies.

Initially, Yemeni media outlets reported that Ahmed Saleh had refused to hand over the missiles, or claimed that loyalists had hidden many of them in the mountains surrounding the capital ([Yemen Press](#), December 10, 2012; [Mareb Press](#), August 14, 2011). By late December 2012, however, he had begun handing over the missiles to purportedly neutral military leaders, with only the 8th Artillery-Missile Brigade, which had no functional missile systems, relinquished directly to Saleh's adversaries. The fate of mobile missile systems was unclear.

In March 2013, the transitional government attempted to transfer missiles from the 5th and 6th Brigades' bases in Faj Attan to the former PDRY missile base in President Hadi's home province of Lahj ([al-Wasat](#), March 28, 2013). These efforts were reportedly blocked by Yemeni military commanders who balked at the idea of ceding the missiles to commanders of former South Yemen.

Operation Decisive Storm

By April 2013, the Hadi government had successfully removed Saleh's relatives from their positions and dissolved the YRG, merging the nearly two-dozen constituent brigades into a smattering of new units, some under the conventional military chain of command and others reporting directly to the president.

This apparently successful restructuring masked a growing power vacuum created by the failed transitional process, which formally ended in early 2014. Over the following months, Yemen's rudderless government teetered toward insolvency and found itself increasingly unable to govern. By the summer of 2014, many former YRG units — including the missile brigades — were in mutinous disarray over unpaid bonuses and salaries ([al-Araby al-Jadid](#), September 9, 2014).

The downward spiral came to a sudden halt in September 2014, when the Houthi takeover of Sanaa injected new life into Yemen's crumbling armed forces.

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Having fought government forces intermittently between 2004 and 2010, when Saleh resigned in 2011, the Houthis began pushing outward from their strongholds in Yemen's Saada province.

In the second half of 2013, they allied with Saleh loyalists against GCC-backed groups that were increasingly dominating the transitional government, and in the summer of 2014, Houthi gunmen began setting up checkpoints on roads into the capital. As tensions increased, former YRG forces guarding the city declared themselves neutral. However, by refusing to block the Houthis' entry, these troops signaled their allegiance was not with the interim government.

In September 2014, the Houthis seized Sana'a. The takeover brought the moribund GCC-led transitional period to an abrupt end. According to a high-level defector from the movement, an immediate Houthi priority was to gain control over what remained of Yemen's elite military forces and their armaments, in particular the YRG ([al-Tagheer](#), October 12, 2016).

In mid-December 2014, Yemeni media reported that Houthi fighters had approached the gates of the Faj Attan base, home to Yemen's fixed ballistic missile systems ([al-Jazeera](#), December 11, 2014). Although the government initially denied that there was any reason for concern, by late January 2015, Yemeni media was reporting that the Houthis had possibly taken over the base ([al-Bawaba](#), December 11, 2014; [IINA](#), January 21, 2015).

Saudi Arabia feared it would be the intended target of any captured missiles. As early as November 2014, there were claims that the Houthis had transported mobile missile systems to their northern strongholds along the border and pointed them toward the Kingdom ([Yemen Press](#), November 27, 2014).

In March 2015, GCC states, led by Saudi Arabia, launched an aerial bombing campaign named Decisive Storm, intended to counter the perceived threat of the Houthi "armed buildup including heavy weapons and missiles on the borders of the Kingdom of Saudi Arabia" ([Embassy of Saudi Arabia](#), March 26, 2015). Yemen's ballistic missile systems were among the campaign's primary targets.

In March and April 2015, massive amounts of ordnance were dropped on Faj Attan, where missiles were stored in underground depots protected by a thick layer of rock ([al-Araby al-Jadid](#), May 23, 2015). The coalition also claimed to have targeted mobile missile systems.

The bombing campaign ended on April 21, with Saudi Arabia declaring it a success. GCC military leaders estimated that 80 percent of Yemen's armed forces' 300 missiles had been destroyed, an assessment that proved to be highly inaccurate. [3]

Houthi Response

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The GCC's aerial and technological superiority meant that Operation Decisive Storm quickly rendered Yemen's fixed ballistic missile systems ineffective. YRG-Houthi forces countered this asymmetry by employing mobile missiles as insurgent weapons, emphasizing mobility at the expense of accuracy and magnifying their importance in the informational realm.

YRG-Houthi forces launched their first Scud missile toward Saudi Arabia on June 6, 2015. Over the next 18 months, they claimed over two dozen launches toward Saudi Arabia and several others targeting GCC and allied forces within Yemeni territory. [4] According to expert analysis, in the 18 months from June 2015, Saudi Arabian air defenses intercepted 24 out of 33 missiles targeting Saudi territory ([CSIS](#), October 13, 2016).

Although YRG-Houthi capabilities may be inflated — Arabic-language media reports often refer to unguided missile and rocket strikes as ballistic missile attacks — YRG-Houthi forces have used short-distance missiles and rockets extensively to strike Saudi facilities along the border.

Most, if not all, of these rockets and missiles are apparently locally assembled but based on Iranian designs ([YJC](#), July 26, 2016). According to the Houthis, their range is from 15-75 kilometers (km), with warheads ranging from 15 kilograms to half of a ton on the largest of them, the Zalzal-3.

Three types of modified missiles have been launched at Saudi Arabia: the Qaher-1, a S-75 surface-to-air (SAM) missile modified for ground rather than air targeting first used in July 2016; the Burkan-1, a modified Scud-type first launched toward the vital area of al-Taif-Mecca-Jeddah in October 2016; and, the Burkan-2, which was “test-fired” in a launch targeting the Saudi capital Riyadh in February 2017. [5]

Following the model established by Iraqi forces during the First Gulf War, YRG-Houthi forces have leveraged Yemen's advantageous terrain to conceal mobile launchers while also employing tactical deception to thwart GCC Transporter Erector Launchers (TEL) hunting efforts.

As with Iraqi forces 25 years before, YRG-Houthi missiles have largely missed their targets, but YRG-Houthi forces still capitalize on media coverage of the launches — the ability to launch missiles amidst sustained GCC military efforts to deprive them of these very capabilities undermines the credibility of GCC claims regarding the conflict.

The media arm of the YRG-Houthi Missile Forces is active in publicizing new systems and distributing videos of claimed launches. The successful modification of S-75 SAMs and Scud-type missiles is meant to convey a magnified image of domestic production capabilities, even though none of these modified missiles appears to have yet struck a target.

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Domestically developed rocket artillery systems are often presented as if they were in the same class of weapons as ballistic missiles. Statements accompanying the launches invariably claim that the target was struck “with great precision,” putting the burden of proof of interception on the Saudi military coalition. These inaccurate but heavily publicized missiles have forced Saudi Arabia to deploy a large number of expensive missile defense systems, raising the cost to the Kingdom of waging war.

The GCC coalition and its Yemeni allies have proven ineffective in neutralizing the missile threat posed by the YRG-Houthi alliance. Political attempts between 2012 and 2014 to transfer the missiles into friendly hands failed due to an absence of support within the Yemeni military, while military attempts since 2015 to destroy all missile systems have been thwarted by the YRG-Houthi forces.

The Saudi-led campaign in Yemen, which many expected to be brief and decisive, has turned into a war of attrition with no clear end in sight. Nearly two years after declaring that the majority of Yemen’s missile systems had been neutralized, Saudi Arabia faces an adversary whose military resilience is regularly demonstrated through its missile launches.

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Notes

[1] See the [Nuclear Threat Initiative](#) report on Yemen (updated July, 2016).

[2] The overall missile brigades command was given to Major General Ali Muhsin Muthanna, former commander of a SCUD missile brigade. He was replaced in April 2013 by Mohammed Nasr

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Ahmed al-Atifi, who was previously commander of the 5th Brigade and who had also commanded a SCUD brigade. In late 2016, al-Atifi was named defense minister in the Huthi-led government based in Sanaa.

[3] The GCC estimate of 300 missiles is significantly higher than pre-2011 estimates of Yemen's missile stockpiles. It is unclear whether this is because it included inoperable systems and short-range rockets, reflected new capabilities acquired after November 2011 or was simply a politically inflated number.

[4] Two strikes using SS-21s within Yemeni territory appear to have caused significant damage to GCC and allied forces – one on 4 September 2015 at a FOB in the desert of Mareb Province, and another on 14 December 2015 near the strategic Bab al-Mandab chokepoint on the Red Sea coast. Following those two successful strikes the GCC deployed Patriot Missiles inside Yemen. According to Mohammed bin Khalid, an influential Saudi military commenter on Twitter, during their first year of deployment in Marib Province the UAE's Patriot batteries had intercepted more than 70 missiles launched by Houthi forces.

[5] The Burkan-1 that was launched toward the vital area of al-Taif-Mecca-Jeddah in October 2016 was likely modeled on the modified SCUDs used by Iraqi forces, which were altered for greater range at the expense of accuracy and payload.

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